

### REMARKS

In response to the Office Action dated December 5, 2003, the above amendments to the claims have been made. No new matter has been added. Examination of the above-referenced application is respectfully requested.

#### Claim Rejections 35 USC 102

Claims 1-6, 8, 10-18, and 22 stand rejected under 35 USC 102(b) as being anticipated by Nishikawa et al (US Pat. No. 5,907,375).

The Examiner states that Nishikawa et al discloses a “membrane” as shown by switch matrix board 1 (and later the Examiner employs “membrane board 6” as the recited membrane), a “display window” as shown by liquid crystal display screen 2, and “depressible keys” as shown by ten-key numerical pad” 4. It is respectfully noted, however, that the membrane 1 (nor membrane 6) of Nishikawa et al does not comprise the screen 2 and the pad 4, because they are separate elements which are then assembled together, and therefore Nishikawa et al does not anticipate nor suggest the claimed invention. That is, it is clearly recited within Claims 1, 12, and 20 that the membrane includes both the display window and the depressible keys.

Additionally, it should be understood that the separate elements of Nishikawa et al, that is, the separate components of a key pad 4 and a screen 2, do not form part of a membrane. A membrane is a “*thin, pliable sheet of material*”. This is the common denominator for all definitions of membrane, including even biological and chemical definitions, and is the definition of membrane found in dictionaries printed prior to the filing date of this application (e.g. The Random House College Dictionary, 1973) and in on-line dictionaries available today via the Internet (e.g. dictionary.com).

In one part of the rejection, the Examiner states that “*In figure 1, touch screen 5 is next to the key pad 4 as they sit on the membrane 6*” thereby addressing the fact that the membrane itself does not comprise the display and the keypad, which are elements within Applicants’ recited membrane. Thus, Applicants respectfully submit that, even prior to amendment, Nishikawa et al does not anticipate, nor make obvious, a resistive touch membrane comprising both a display window and a membrane keypad, as recited in the originally filed claims 1, 12, and 20.

Nonetheless, in the interest of furthering this application to allowance, Applicants have amended

Claims 1, 12, and 20 to undoubtedly define the resistive touch membrane over the prior art as described below:

Claims 1, 12, and 20 have been amended to recite that the resistive touch membrane comprises "*a thin sheet of material*". This is the well known definition of membrane, as described above, and therefore does not constitute new matter. It is also an inherent feature when viewing, for example, FIG. 4, which shows the membrane 40 which is clearly thin, and obviously a sheet of material. It is noted that while the elements 1, 2, and 4 of Nishikawa et al may be separately thin, and may be separately made of some form of material, Claims 1, 12, and 20 are only reciting a single resistive touch membrane, and Nishikawa et al does not disclose one membrane which includes both the display window and the keys.

Claims 1, 12, and 20 have been further amended to recite that the membrane has "*integrated touchscreen and keys*". The integral nature of this membrane is repeatedly described within the specification, such as in Paragraphs [0001], [0005], and even the Abstract. It is noted that the input-output unit of Nishikawa et al, in particular the display window 2 and pad 4 are clearly elements within an assembly of parts and do not constitute, nor make obvious the membrane of the amended claims.

Claims 1, 12, and 20 have been further amended to recite that the membrane comprises "*one front surface*". This feature is shown in the drawings, front surface 50, and described within the specification, and is inherent in a membrane construction. While the Examiner has employed the switch matrix board 1 as reading on the membrane of the claims, this choice of parts fails to read on all the recited elements of the membrane since the claimed membrane is also recited as including the display window and the depressible keys. If matrix board 1 is the membrane, then the front surface of the board 1 is covered by the display 2 and the pad 4, both of which have their own front surfaces, and the front surface of the display 2 is partially covered by the pad 4.

Claims 1, 12, and 20 have been further amended to recite that the membrane includes "*a display window for the touchscreen of the membrane, the display window including touch regions occupying a portion of the front surface of the membrane*". This location of the display window on a portion of the front surface of the membrane is clearly shown in FIG. 3 (display window 18, membrane 40, front surface 50). As described above, the touchscreen is recited as an integral part of the membrane, and therefore the display window is an integral part of the

membrane as well. With the display window recited as occupying a portion of the front surface of the membrane, it should be clearly understood that the membrane includes one front surface, and that the display screen occupies a portion of that front surface, rather than a separate display covering part of the front surface of the membrane. This is not shown, nor made obvious, by the Nishikawa et al reference.

Claims 1, 12, and 20 have been further amended to recite that the membrane includes a membrane keypad comprising depressible keys *“embossed on the membrane and occupying a portion of the front surface of the membrane”*. At least two features are recited here which are not shown in the Nishikawa et al reference. First, Nishikawa et al does not disclose keys which are embossed on the membrane itself (as noted by the Examiner, switch matrix board 1 does not include the keys of the pad 4 embossed on the board 1). Second, as described above, the keys are recited as an integral part of the membrane, and therefore the keypad is an integral part of the membrane as well. With the keypad recited as occupying a portion of the front surface of the membrane, it should be clearly understood that the membrane includes one front surface, and that the keypad occupies a portion of that front surface, rather than a separate keypad covering part of the front surface of the membrane.

In view of the above amendments, it is respectfully submitted that Claims 1, 12, and 20 clearly and patentably define the resistive touch membrane over the input-output device of Nishikawa et al. Furthermore, it is noted that the input-output device of Nishikawa et al is the type of device generally targeted towards copiers, facsimiles, and printers (Col. 1, lines 5-10). The objects of Nishikawa et al are focused on the bendable display screen, with a focus on durability and viewability. The keys of pad 4 are not an inventive part of the device of Nishikawa et al, as this reference does not disclose nor contemplate any improvements for the keys. In the type of capacity in which the input-output device of Nishikawa et al is employed, such as copiers, the pad 4 would constitute operation buttons most frequently used (such as entering number of copies) and therefore the operability of the display, even the improved display of Nishikawa et al, may be compromised if the numerical keys are included within the display screen 2. *Even if* it was within the scope of Nishikawa et al to include the numerical keys of pad 4 within the display screen 2, the numerical keys would merely be additional touch regions within screen 2, rather than depressible embossed keys. That is, nowhere is it suggested or made obvious to emboss depressible keys within the display screen 2 of Nishikawa et al. A

single membrane including a display screen and integral embossed keys is not made obvious anywhere within Nishikawa et al, and thus, Applicants respectfully submit that Claims 1, 12, and 20 patentably define over Nishikawa et al and further request that Claims 1, 12, and 20, and the claims which depend therefrom, be found allowable by the Examiner.

As for Claims 12 and 20, these claims have been additionally amended to recite that the housing of the operator interface has an opening for accessing both the display window and the keypad. Nishikawa et al does not disclose such a feature because the window 5 is only large enough to view the display screen 2 because the buttons for pad 4 appear to be integrally formed with the window 5.

**Claim Rejections 35 USC 103**

Claims 6 and 17 stand rejected under 35 USC 103(a) as being unpatentable over Nishikawa et al 5,907,375.

Claim 6 has been canceled and Claim 17 is dependent upon Claim 12, which is respectfully submitted as allowable for the reasons described above with respect to Claim 12. It is respectfully submitted that the claims patentably define over the Nishikawa et al reference as detailed above.

Claim 9 stands rejected under 35 USC 103(a) as being unpatentable over Nishikawa et al in view of McRight et al (US Pat. No. 5,581,251).

The Examiner turns to McRight et al to disclose the existence of dome keys. McRight et al does not, however, remedy the Nishikawa et al reference with respect to keys which are embossed on a membrane which also includes the display screen as defined within Claim 1, upon which Claim 9 is dependent. Thus, it is respectfully submitted that the combination of Nishikawa et al and McRight et al do not read on the recited claims and that Claim 9, as well as the other claims are patentable over Nishikawa et al and McRight et al.

Claim 7 stands rejected under 35 USC 103(a) as being unpatentable over Nishikawa 5,907,375 in view of Dugas (US Pat. No. 5,612,692).

The Examiner turns to Dugas to teach the prior existence of LED's. While the prior existence of LED's is acknowledged, it is respectfully submitted that Dugas does not remedy

Nishikawa et al with respect to a membrane including both a display screen and embossed keys, nor does Dugas teach the incorporation of “*an embossed LED window on the front surface of the membrane*” as is presently recited within Claim 7, and as described within the specification in Paragraph [0020]. Thus, it is respectfully submitted that Claim 7 further patentably defines the membrane over the combination of the Nishikawa et al and Dugas references.

Claims 20-21 stand rejected under 35 USC 103(a) as being unpatentable over Nishikawa et al in view of Cumens et al (US Pat. No. 5,570,632).

The Examiner turns to Cumens et al to apparently teach an operator interface communicable with a programmable logic controller of an industrial management system. The standard touch screen operator interface 122 employed by Cumens et al, however, does not remedy the deficiencies of the Nishikawa et al reference with respect to a membrane which includes both an integrally formed display screen and depressible keys embossed on the surface of the membrane. For at least this reason, it is respectfully submitted that the claims patentably define over the combination of the Nishikawa et al and Cumens et al references, as well as the remainder of the prior art.

#### **Newly Added Claims**

Claims 23-25 have been newly added to depend upon Claims 1, 12, and 20, respectively, and to recite that “*the front surface is uninterrupted except for a plurality of mounting holes for securing the membrane within the housing*”. This is again consistent with the recitation of the membrane in the independent claims, and is as described within the specification in paragraph [0021] and as shown within FIGS. 2 and 3. Thus, no new matter has been added. It is noted that Nishikawa et al neither contains the recited mounting holes, nor comprises an uninterrupted front surface. Thus, it is respectfully submitted that Claims 23-25 further define the membrane over the prior art and allowance is respectfully requested.

**CONCLUSION**

The claims have been amended as described above. No new matter has been added. Reconsideration of the above-referenced application is respectfully requested.

Any fees associated with this Amendment are dealt with in the accompanying transmittal sheet. However, should any further fees be deemed necessary, please charge them to deposit account number 06-1130, maintained by Applicants' representatives.

In furtherance of this application, the Examiner is cordially requested to contact the undersigned at any time during examination of this application.

Respectfully submitted,  
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